What is claimed is:

1. In an implantable medical device that provisionally detects a polymorphic tachyarrhythmia of the heart of a patient as a function of measured time intervals between sensed events in a cardiac signal, a method of improving the specificity of discriminating between a monomorphic tachyarrhythmia and a polymorphic tachyarrhythmia comprising the steps of:

a) provisionally declaring a polymorphic tachyarrhythmia when at least a first number of the measured time intervals satisfy the polymorphic tachyarrhythmia detection criteria;

b) successively sampling, processing, and temporarily storing the cardiac signal to provide sampled signal amplitudes;

c) determining a baseline window between sensed events and a sensed event window encompassing the sensed event;

d) determining baseline zero crossing points from the sampled signal amplitudes in the baseline window and event zero crossing points from the sampled signal amplitudes in the sensed event window;

e) determining the absolute signal slope at each zero crossing point;

f) weighting each zero crossing point by the determined absolute signal slope;

g) summing the weighted zero crossing points in the baseline window to provide a baseline weighted zero crossing sum;

h) summing the weighted zero crossing points in the sensed event window to provide a sensed event weighted zero crossing sum;

i) subtracting the baseline weighted zero crossing sum from the sensed event weighted zero crossing sum to provide a weighted zero crossing sum metric related to the morphology of the cardiac signal;

j) comparing the weighted zero crossing sum metric to a weighted zero crossing sum threshold;

k) accumulating a match count *x* of weighted zero crossing sum metrics that meet the weighted zero crossing threshold over *y* repetitions of

steps b) through j) as long as a polymorphic tachyarrhythmia is provisionally declared in step a);

l) withholding the final declaration of a polymorphic tachyarrhythmia if the count *x* indicates that the corresponding cardiac signals exhibit frequency content suggestive of a monomorphic tachyarrhythmia; and

m) making the final declaration of a polymorphic tachyarrhythmia if the count *x* indicates that the corresponding cardiac signals exhibit frequency content suggestive of a polymorphic tachyarrhythmia and the polymorphic tachyarrhythmia is provisionally declared in step a).

2. The method of Claim 1, further comprising repeating steps b) through m) as long as step a) is met until step m) is met.

3. The method of Claim 2, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and further comprising:

n) delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made in step m).

4. The method of Claim 2, wherein step l) comprises:

establishing a withhold count corresponding to *z* measured time intervals between sensed events of successive cardiac signals; and

repeating steps a) through k) at least *z* times.

5. The method of Claim 2, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and wherein:

step l) comprises establishing a withhold count corresponding to *z* measured time intervals between each detected features successive cardiac signals; and further comprising:

n) repeating steps b) through m) at least *z* times; and

o) delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made in step m).

6. The method of Claim 2, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and delivering an anti-tachycardia therapy and further comprising:

n) delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made in step m); and

o) delivering an anti-tachycardia therapy when the count x indicates that the corresponding cardiac signals exhibit frequency content suggestive of a monomorphic tachyarrhythmia in step l) and a polymorphic tachyarrhythmia is provisionally declared in step a).

7. The method of Claim 1, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and delivering an anti-tachycardia therapy and further comprising:

n) delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made in step m); and

o) delivering an anti-tachycardia therapy when the count x indicates that the corresponding cardiac signals exhibit frequency content suggestive of a monomorphic tachyarrhythmia in step l) and a polymorphic tachyarrhythmia is provisionally declared in step a).

8. The method of Claim 7, wherein:

step k) comprises comparing the count *x* to a WZCS count threshold; and

step m) comprises making the final declaration of a polymorphic tachyarrhythmia if the count *x* does not meet the WZCS count threshold and a polymorphic tachyarrhythmia is provisionally declared in step a).

9. The method of Claim 1, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and further comprising:

n) delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made in step m).

10. The method of Claim 9, wherein:

step k) comprises comparing the count *x* to a WZCS count threshold; and

step m) comprises making the final declaration of a polymorphic tachyarrhythmia if the count *x* does not meet the WZCS count threshold and a polymorphic tachyarrhythmia is provisionally declared in step a).

11. The method of Claim 1, wherein step l) comprises:

establishing a withhold count corresponding to *z* measured time intervals between sensed events of successive cardiac signals; and

repeating steps a) through k) at least *z* times.

12. The method of Claim 1, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and wherein:

step l) comprises establishing a withhold count corresponding to *z* measured time intervals between each detected features successive cardiac signals; and further comprising:

n) repeating steps b) through k) at least *z* times; and

o) delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made in step m).

13. The method of Claim 1, wherein

step k) comprises comparing the count *x* to a f WZCS count threshold; and

step m) comprises making the final declaration of a polymorphic tachyarrhythmia if the count *x* does not meet the WZCS count threshold and a polymorphic tachyarrhythmia is provisionally declared in step a).

14. In an implantable medical device that provisionally detects a polymorphic tachyarrhythmia of the heart of a patient as a function of measured time intervals between sensed events in a cardiac signal, a system of improving the specificity of discriminating between a monomorphic tachyarrhythmia and a polymorphic tachyarrhythmia comprising:

provisional declaring means for provisionally declaring a polymorphic tachyarrhythmia when at least a first number of the measured time intervals satisfy the polymorphic tachyarrhythmia detection criteria;

signal processing means for successively sampling, processing, and temporarily storing the cardiac signal to derive a plurality *y* of data sets of signal amplitudes related to *y* sensed events;

window defining means for determining a baseline window between sensed events and a sensed event window encompassing the sensed event of each of the *y* data sets;

zero crossing point determining means for determining baseline zero crossing points from the sampled signal amplitudes in the baseline window and event zero crossing points from the sampled signal amplitudes in the sensed event window;

slope determining means for determining the absolute signal slope at each zero crossing point in the baseline and sensed event windows;

weighting means for weighting each zero crossing point by the determined absolute signal slope;

summing means for summing the weighted zero crossing points in the baseline window to provide a baseline weighted zero crossing sum and the weighted zero crossing points in the sensed event window to provide a sensed event weighted zero crossing sum;

means for subtracting the baseline weighted zero crossing sum from the sensed event weighted zero crossing sum to provide a weighted zero crossing sum metric related to the morphology of the cardiac signal;

means for comparing the weighted zero crossing sum metric to a weighted zero crossing sum threshold;

counting means for accumulating a count *x* of weighted zero crossing sum metrics that meet the weighted zero crossing threshold among *y* data sets as long as a polymorphic tachyarrhythmia is provisionally declared;

withholding means for withholding the final declaration of a polymorphic tachyarrhythmia if the count *x* indicates that the corresponding cardiac signals exhibit frequency content suggestive of a monomorphic tachyarrhythmia; and

final declaring means for making the final declaration of a polymorphic tachyarrhythmia if the count *x* indicates that the corresponding cardiac signals exhibit frequency content suggestive of a polymorphic tachyarrhythmia and the polymorphic tachyarrhythmia is provisionally declared.

15. The system of Claim 14, further comprising means for comparing the count *x* to a WZCS count threshold; and

the final declaring means further comprises making the final declaration of a polymorphic tachyarrhythmia if the count *x* does not meet the WZCS count threshold and a polymorphic tachyarrhythmia is provisionally declared.

16. The system of Claim 15, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and further comprising:

means for delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made.

17. The system of Claim 15, wherein:

the withholding means further comprises:

means for establishing a withhold count corresponding to *z* measured time intervals between sensed events of successive cardiac signals if the count *x* indicates that the corresponding cardiac signals exhibit frequency content; and

means for decrementing the withhold count each time that a count *x* indicates that the corresponding cardiac signals exhibit frequency content suggestive of a polymorphic tachyarrhythmia; and

the final declaring means further comprises means responsive to the withhold count for declaring a polymorphic tachyarrhythmia only when the withhold count is decremented to a withhold count less than *z*.

18. The system of Claim 17, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and further comprising:

means for delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made.

19. The system of Claim 15, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and delivering an anti-tachycardia therapy and further comprising:

means for delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made; and

means for delivering an anti-tachycardia therapy when the count x indicates that the corresponding cardiac signals exhibit frequency content suggestive of a monomorphic tachyarrhythmia in step m) and a polymorphic tachyarrhythmia is provisionally declared in step a).

20. The system of Claim 14, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and further comprising:

means for delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made.

21. The system of Claim 14, wherein:

the withholding means further comprises:

means for establishing a withhold count corresponding to *z* measured time intervals between sensed events of successive cardiac signals if the count *x* indicates that the corresponding cardiac signals exhibit frequency content; and

means for decrementing the withhold count each time that a count *x* indicates that the corresponding cardiac signals exhibit frequency content suggestive of a polymorphic tachyarrhythmia; and

the final declaring means further comprises means responsive to the withhold count for declaring a polymorphic tachyarrhythmia only when the withhold count is decremented to a withhold count less than *z*.

22. The system of Claim 21, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and further comprising:

means for delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made.

23. The system of Claim 14, wherein the implantable medical device further comprises an implantable cardioverter/defibrillator having the capability of delivering a C/D shock therapy and delivering an anti-tachycardia therapy and further comprising:

means for delivering a C/D shock therapy when the final declaration of a polymorphic tachyarrhythmia is made; and

means for delivering an anti-tachycardia therapy when the count x indicates that the corresponding cardiac signals exhibit frequency content suggestive of a monomorphic tachyarrhythmia in step m) and a polymorphic tachyarrhythmia is provisionally declared.

24. A method of processing a cardiac signal to derive sensed events and discriminating between a monomorphic tachyarrhythmia and a polymorphic tachyarrhythmia comprising the steps of:

a) successively sampling, processing, and temporarily storing the cardiac signal to provide sampled signal amplitudes;

b) determining a baseline window between sensed events and a sensed event window encompassing the sensed event;

c) determining baseline zero crossing points from the sampled signal amplitudes in the baseline window and event zero crossing points from the sampled signal amplitudes in the sensed event window;

d) determining the absolute signal slope at each zero crossing point;

e) weighting each zero crossing point by the determined absolute signal slope;

f) summing the weighted zero crossing points in the baseline window to provide a baseline weighted zero crossing sum;

g) summing the weighted zero crossing points in the sensed event window to provide a sensed event weighted zero crossing sum;

h) subtracting the baseline weighted zero crossing sum from the sensed event weighted zero crossing sum to provide a weighted zero crossing sum metric related to the morphology of the cardiac signal;

i) comparing the weighted zero crossing sum metric to a weighted zero crossing sum threshold;

j) accumulating a count *x* of weighted zero crossing sum metrics that meet the weighted zero crossing threshold over *y* repetitions of steps a) through i); and

k) declaring a polymorphic tachyarrhythmia if the count *x* indicates that the corresponding cardiac signals exhibit frequency content suggestive of a polymorphic tachyarrhythmia.

25. A system of processing a cardiac signal to derive sensed events and discriminating between a monomorphic tachyarrhythmia and a polymorphic tachyarrhythmia comprising:

signal processing means for successively sampling, processing, and temporarily storing the cardiac signal to derive a plurality *y* of data sets of signal amplitudes related to *y* sensed events;

window defining means for determining a baseline window between sensed events and a sensed event window encompassing the sensed event of each of the *y* data sets;

zero crossing point determining means for determining baseline zero crossing points from the sampled signal amplitudes in the baseline window and event zero crossing points from the sampled signal amplitudes in the sensed event window;

slope determining means for determining the absolute signal slope at each zero crossing point in the baseline and sensed event windows;

weighting means for weighting each zero crossing point by the determined absolute signal slope;

summing means for summing the weighted zero crossing points in the baseline window to provide a baseline weighted zero crossing sum and the weighted zero crossing points in the sensed event window to provide a sensed event weighted zero crossing sum;

means for subtracting the baseline weighted zero crossing sum from the sensed event weighted zero crossing sum to provide a weighted zero crossing sum metric related to the morphology of the cardiac signal;

means for comparing the weighted zero crossing sum metric to a weighted zero crossing sum threshold;

counting means for accumulating a count *x* of weighted zero crossing sum metrics that meet the weighted zero crossing threshold among *y* data sets; and

means for declaring a polymorphic tachyarrhythmia if the count *x* indicates that the corresponding cardiac signals exhibit frequency content suggestive of a polymorphic tachyarrhythmia.